

The SmartBell  
(Technical Report)

The Competition to Shape the Regulatory  
Environment of Autonomous Vehicles  
(STS Research Paper)

An Undergraduate Thesis Portfolio  
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by

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## Preface

Automation can diminish risks, but it can introduce new risks as well.

How can automation improve safety in weight training? Software programs can be used to plan and track workouts, replacing personal trainers. Such programs, however, generally do not provide real-time feedback, which may mitigate injury risks associated with misguided training. The research team therefore developed the SmartBell, a device to guide beginning and advanced weightlifters in barbell exercises. SmartBell detects correct and incorrect repetitions, counts calories and average rest times between sets, and notifies the user if the barbell is parallel to the floor.

How have interest groups competed to influence the regulatory environment governing autonomous vehicles (AVs)? Because AVs need no human driver, they are not susceptible to drunk driving, distraction, or fatigue. However, some warn that AVs may introduce more hazards than they prevent. While automotive and technology companies have extensively lobbied lawmakers and regulators for regulations favorable to AVs, critics demand greater caution and transparency.

## **List of Contents**

1. Preface
2. Technical Report: The SmartBell
3. STS Research Paper: The Competition to Shape the Regulatory Environment  
of Autonomous Vehicles
4. Prospectus